

# Weilun Sun

## Email

sunweilunjwilson@gmail.com

## Homepage

<http://sunweilun.github.com>

## EDUCATION

---

### Bachelor of Science

2010 – 2014 (expected)

Computer Science & Technology  
Tsinghua University, Beijing, China  
Overall GPA: 88/100

Official Overall Ranking: #21 out of 100 students

## RESEARCH EXPERIENCE

---

### Anisotropic Spherical Gaussians

February – May 2013

SIGGRAPH Asia 2013 Technical Paper  
Graphics & Geometry Computing Group, TNList, Tsinghua University  
Mentor: Kun Xu

- Involved in the investigation of the form of *Anisotropic Spherical Gaussians* (ASGs for short).
- Implemented a *Precomputed Radiance Transfer* rendering program based on theories in the paper.
- Proofread derivation of the closed form integral and the convolution expression of ASGs.
- Made most of result figures in the paper.

### Sketch2Scene

September 2012 – January 2013

SIGGRAPH 2013 Technical Paper  
Graphics & Geometry Computing Group, TNList, Tsinghua University  
Mentor: Kun Xu

- Reproduced a single-model retriever based on paper *Sketch-based Shape Retrieval* of SIGGRAPH 2012.
- Implemented part of the GUI of the project system.
- Involved in the discussion of the co-retrieval methods in the paper.

### Graduation Project of Yan Gu (second year PhD candidate at CMU now)

March – May 2012

Student Research Training Program  
Graphics & Geometry Computing Group, TNList, Tsinghua University  
Mentor: Kun Xu

- Reproduced main algorithms of SIGGRAPH Asia 2009 paper *All-Frequency Rendering of Dynamic, Spatial-Varying Reflectance*.

## PUBLICATIONS

---

- “Anisotropic Spherical Gaussians,”  
Proceedings of SIGGRAPH Asia 2013, ACM Transactions on Graphics 32(6), 209:1 - 209:11, 2013.  
Kun Xu, **Wei-Lun Sun**, Zhao Dong, Dan-Yong Zhao, Run-Dong Wu, Shi-Min Hu
- “Sketch2Scene: Sketch-based Co-retrieval and Co-placement of 3D Models,”  
Proceedings of SIGGRAPH 2013, ACM Transactions on Graphics 32(4) , 123:1–123:12, 2013.  
Kun Xu, Kang Chen, Hong-Bo Fu, **Wei-Lun Sun**, Shi-Min Hu

## SMALL PROJECTS

---

### Experiment of Clustering Methods

May 2013

Course Project of Introduction to Machine Learning

- Replaced k-means clustering used in paper *Sketch-Based Shape Retrieval* with different clustering methods including k-medoids and fitting Spherical Gaussians with EM algorithm.
- Derived approximate formulas needed to fit Spherical Gaussians with EM algorithm.
- Made simple comparisons among different methods by statistical and retrieval results.
- Rearranged code written for *Sketch2Scene* and implemented a complete software with GUI.

### Simple 3D rigid body physics engine

January 11th – January 13th 2013

Course Project of Computer Graphics Real Time and Animation

- Implemented rigid body collision simulation between sphere and net or fixed objects in any shape with friction under gravity field.
- Took spinning into consideration.
- Simulated net system using rigid body spheres to represent knots and weightless stiff springs to represent cords.
- Created a basketball shooting game using the engine.(Cooperated with my classmate Yi-Ning Liu)

### Fantastic Drummer

October – December 2012

Course Project of The Principles of Signal Processing

With Classmate Iat Chong Chan and Yi-Ning Liu

- Leader of the group.
- Implemented drum sound extraction and classification algorithm by Matlab.
- Implemented a game like Taiko no Tatsujin on ios, but can turn any given song into playable game level.
- Came up with the idea.

## COMPUTER SKILLS

---

**Programming Languages:** c/c++, Java, Python, Matlab

**Softwares & Applications:** OPENCV, OPENGGL, GLSL, QT, FLTK, Android, CUDA

**Operating Systems:** Windows, Linux

## HONORS

---

2nd Place of Tsinghua Talent Show

2012

- Performed street soccer on stage.

First Prize of Beijing University Physics Olympiads

2011

## INTERESTS

---

Street Soccer, Soccer (Midfielder of CST Department Soccer Team of Tsinghua University)